

REMARKS

As shown in the claim listing above, Applicant proposes to amend the independent claims (16, 27 and 38), to more explicitly recite a previously claimed distinction over applied prior art. Claims 16-50 would remain active in the case. It is believed that this response addresses all issues presented in the final rejection and therefore places this case in condition for immediate allowance. Prompt favorable reconsideration of this matter is solicited.

Entry of Amendment Under Rule 116

Applicant submits that the amendments above should be entered, even though this case has been finally rejected.

Each of the three independent claims has been amended to explicitly specify the signal arrangement that inherently results from the concatenation of the header with the multichannel-spread-spectrum signal. The word ‘concatenate’ means to link together in series, as in a chain (see *Webster's Encyclopedic Unabridged Dictionary of the English Language*, Portland House, New York, © 1989 by dilithium Press, Ltd., page 303; copy enclosed). In the example disclosed, the header is followed in time by the multichannel-spread-spectrum signal (for convenience, in the published version of this application 2001/0015996, see e.g. the first three lines of paragraph [0023]). Concatenation was previously specified in the independent claims; and the “followed in time” relationship was specified in dependent claims, such as 24, 35 and 45. Hence, the amendments to the independent claims neither add new subject matter nor raise new issues requiring further search or consideration.

For reasons discussed below, it is believed that the amended claims are patentable over the art, and as a result, this case is in condition for allowance. If the Examiner disagrees, the

amendments do place the claims in better condition for Appeal by making the result of the concatenation more explicit.

The amendments were not made to the independent claims earlier, because the Examiner had not previously applied the Kato et al. 5,793,794 patent in an art rejection. It appears that this particular patent was not of record in this application or in any of the ancestors of this case, until cited by the Examiner in the March 22, 2004 Office Action.

For at least these reasons, it is submitted that entry of the above amendments is proper under 37 C.F.R. § 1.116. Prompt entry and full examination of the amended claims is respectfully requested.

The Latest Art Rejections

Claims 16, 20-27, 31-38 and 42-50 stand rejected as unpatentable over U.S. Patent No. 5,166,951 to Schilling (hereinafter the Schilling '951 patent) in view of newly cited U.S. Patent No. 5,793,794 to Kato et al. (hereinafter). Claims 17-19, 28-30 and 39-41 stand rejected as unpatentable over those two patents further in combination with the U.S. Patent No. 5,619,526 to Kim et al. (hereinafter the Kim '526 patent).

Patentability

The rejections are traversed. Both of the rejections rely on the Kato '794 patent for a purported teaching of combining a header with a multichannel-spread-spectrum signal, to allegedly satisfy claim limitations regarding concatenating the header with the multichannel-spread-spectrum signal. It is respectfully submitted that the Kato '794 patent would not fairly teach a person skilled in the art to concatenate the header with the multichannel-spread-spectrum signal, to generate a packet-spread-spectrum signal in the form of a time series of signals comprising the header and the multichannel-spread-spectrum signal, as in each of Applicant's independent claims. Hence,

neither combination that relies on the Kato '794 patent for the combining of the header would actually satisfy this explicit concatenation requirement of the independent claims. A more detailed explanation follows.

The Examiner recognizes that the base document, the Schilling '951 patent, does not disclose concatenation of a header with the multichannel-spread-spectrum signal. The combinations of Schilling '951 with the Kato '794 patent are founded on the assertion that the Kato '794 patent teaches:

... generating a preamble "header" comprising synchronizing such PN0 in front of plurality of spread spectrum channels wherein the preamble "header" comprising a predefined sequence of symbols spread spectrum processed by a chip sequence...

It is respectfully submitted that the quoted interpretation of the PN0 processing of the Kato '794 patent does not satisfy the claim limitations regarding concatenation of the header. To the contrary, the Kato '794 patent actually teaches providing a "header" that is embedded on a continuous and dedicated code multiplex channel that begins before data transmission and continues during data transmission. The resulting spread-spectrum signal will appear like this:

	DATA 1
	DATA
	DATA n
PILOT (With Preamble)	PILOT (Without Preamble)

Support for the above-illustrated interpretation of what the Kato '794 patent actually teaches can be found, for example, in the following references in that patent to the transmitter:

1. Figure 20 shows the stream that goes through mixer 3109 is the continuous and dedicated code multiplex (pilot) channel, or what will eventually become the "sync spreading code channel" in the '794 patent. As shown, the stream

is one of the multiple streams that are parallel to each other, and it is ongoing through data transmission. The Output SW 3102 can turn off mixers 3110-1 to 3110-n during “header” transmission; but mixer 3109 remains open the whole time, so that the mixer 3109 continues to provide the preamble transmission concurrently with the data transmissions on other code channels.

2. Figure 24 and column 13, line 46 et seq. of Kato ‘794 further corroborates this point. As stated, “FIG. 24 is a flowchart showing the operation at the time of start of the transmission in the control circuit of the transmitting apparatus.” As shown, although the preamble time is over when the data transmission starts, there is no step that actually terminates or ends the transmission of the preamble. In the Kato ‘794 transmitter, “when a data transmission request is received from an external interface (not shown), the control circuit 3104 of the transmitting apparatus transmits an output OFF signal to the output switch 3102 in the code generation circuit 3101 (step S1). The transmission of a repetitive preamble pattern of (0, 1) to the mixer 3109 is started (S2). An initial synchronization preamble transmission timer (not shown) is started. The preamble pattern is modulated by the sync channel spreading code which is generated from the code generation circuit 3101 and, after that, the carrier is modulated by the mixer 3108 and is transmitted.”

3. At column 12, line 29, the ‘794 patent reads “A mixer 3109 modulates a preamble pattern by the spreading code for synchronization as a spreading code channel for synchronization. Mixers 3110-1 to 3110-n modulate the

transmission data by the spreading codes selected by the output switch 3102 as data communication code channels.”

Support for the interpretation of Kato ‘794 as a teaching of continued pilot channel transmission in parallel with the data transmission also can be found at these references to the receiver:

1. As shown in Fig. 13, since the “header” is embedded on a dedicated and continuously transmitting (pilot) channel parallel to other data channels, the receiver therefore is designed in a way such that the carrier reproduction CKT 25 is dedicated to the monitoring of PN0.

2. Text corroborating the same can be found at column 9, lines 38-42, which states: “However, since the baseband signal which is output from the mixer 1251 of the sync demodulation circuit 125 corresponds to the channel which is used only for synchronization, the judgment of the demodulation data is not executed.”

For these reasons, it is submitted that the Kato ‘794 patent actually teaches using the PN0 code processing to transmit a pilot on a parallel code channel. Although the pilot transmission starts before the data transmissions, the pilot transmission continues in parallel with the data transmissions as represented in simplified diagrammatic form in the illustration above. Hence, there is no concatenation of a header with the data, in the manner actually claimed.

In contrast to Kato ‘794, the methods and apparatus of the present claims provide a packet-spread-spectrum signal, which comprises a time series of signals comprising the header and the multichannel-spread-spectrum signal. As mentioned earlier, to “concatenate” means to link together in series, as in a chain. In the context of a spread-spectrum transmission of multiple components, to “concatenate” (or “concatenating” as in the claims) clearly means to add the

header in a time multiplex fashion and provides for a clear delineation in TIME between header transmission and the data transmission. In the disclosed example (and in dependent claims 24, 35 and 45), the header is actually followed in time by the multichannel-spread-spectrum signal which carries the sub-data sequence channels. Concatenation, with the disclosed “followed in time” arrangement, results in a packet-spread-spectrum signal that looks approximately like this:

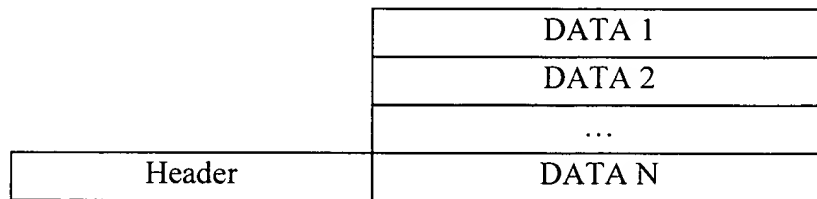


Fig. 2 of the present application shows that all data signals are multiplied and subsequently combined. The text of the application clearly discloses that the header is “followed in time” by the multichannel-spread-spectrum signal, which is formed by combining the spread-spectrum channels that resulted from the spread-spectrum processing of the sub-data-sequence channels. Application Fig 2, together with the “followed in time” teaching, clearly shows that the header device 46 in the disclosed transmitter, unlike the output switch in the Kato ‘794 system, switches between header transmission and an ALL data transmission in an exclusive TIME multiplex fashion, rather than in a CODE multiplex fashion as in the Kato ‘794 system. As shown by the immediately preceding illustration, in the arrangement disclosed in this application, all transmissions in the non-header phase can be used PURELY for data; and no channel is RESERVED for header, synchronization, timing, or other reference purposes, because the header is concatenated to the multichannel-spread-spectrum signal, not transmitted in parallel with the multichannel-spread-spectrum signal containing the sub-data-sequence channels as taught in the Kato ‘794 patent.

The combinations using Kato '794 proposed in both art rejections would result in transmission of a packet-spread-spectrum signal in which the pilot/preamble or alleged 'header' is transmitted in parallel with the signal(s) containing the data. As such, both combinations fail to meet the claim requirement for concatenation of the header onto the multichannel-spread-spectrum signal, which results in a packet-spread-spectrum signal in the form of a time series of signals comprising the header and the multichannel-spread-spectrum signal, as explicitly recited in both independent claims. Since neither combination would satisfy all the limitations of any independent claim, each of the independent claims (16, 27 and 38) and all of the claims that depend there from should be patentable over the art applied in the latest Office Action.

Applicant therefore requests withdrawal of both obviousness rejections recited in the final Office Action dated March 22, 2004. Upon withdrawal of those art rejections, all pending claims (16-50) should be patentable over all art of record in this matter.

Conclusions

For the reasons discussed above, it is believed that pending claims 16-50 are patentable over the art. Hence all pending claims should be in condition for allowance. Prompt favorable reconsideration and issuance of a Notice of Allowability are earnestly solicited.

It is believed that this response addresses all issues raised in the latest final Office Action. However, if any other issue should arise, which may be addressed by an interview or obviated by an Examiner's amendment, it is requested that the Examiner telephone Applicant's representative at the number shown below.

To the extent necessary, if any, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

09/732,185

including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "Keith E. George", is written over the printed name.

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con- (Fr. *con* *kō* *nā*), *n.* a seaport in and the capital of Guinea, in NW Africa. 112,491 with suburbs (1980). Also, Konoakri.
con-a-mō-re (It. *kōn* *kā* *mō* *rē* for 1; *kōn* *ə* *mōr* *ē*, *mōr* *ā*, *mōr* *ē*, *mōr* *ā*, *kōn* for 2). 1. (*italics*) Italian, with love, tender enthusiasm, or zeal. 2. tenderly and lovingly (used as a musical direction).
con-ant (kō *nānt*), *n.* James Bryant, born 1893, U.S. chemist and educator; president of Harvard University 1938-42.
con-a-tion (kō *nā* *shān*), *n.* Psychol. the part of mental life having to do with striving, including desire and volition. [*L. cōnditiō* - (s. of *cōnditiō*) an effort, equiv. to *cōndi* (us) (ptp. of *cōndī* to try) + *-tiō* - (ion)]
con-a-tive (kō *nā* *tiv*, kō *nā* *no*), *adj.* 1. Psychol. pertaining to or of the nature of conation. 2. Gram. expressing endeavor or effort: a *conative verb*. —*n.* 3. Gram. a conative word, affix, or verbal aspect. [CONATION + *-ive*]
con-a-tū (kō *nā* *tū*), *n.* pl. *-tū*. 1. an effort or striving. 2. a force or tendency stimulating a human effort. 3. (in the philosophy of Spinoza) the force in every animate creature toward the preservation of its existence. [*L. exertion*, *n.* use of *cōndi*us, ptp. of *cōndī* to attempt; see CONATION]
con-brī-o (kōn brī *ō*, kōn; if, kōn brā *ō*), *with vigor; vivaciously* (used as a musical direction). [*L. it*]
conc- 1. concentrate. 2. concentrated. 3. concentration. 4. concerning.
con-cat-e-nate (kōn kat *nāt*'), *v.* -*nated*, -*noting*, -*ing*. —*v.t.* 1. to link together; unite in a series or chain. —*adj.* 2. linked together, as in a chain. [*L. concatenāre* (us) (ptp. of *concatināre*), equiv. to *con-* *con-* + *L. catēnā* (a) CHAIN + *-ātus* -*AT*'] —*con-cat/-e-nā* *tor*, *n.*
con-cat-e-nation (kōn kat *nā* *shān*), *n.* 1. the act of concatenating. 2. the state of being concatenated; connection, as in a chain. 3. a series of interconnected or interdependent things or events. [*L. concatenāre* (us) (ptp. of *concatināre*), equiv. to *con-* *con-* + *L. catēnā* (us) CONCATENATE + *-tiō* - (ion)]
con-cave (*adj.*), *s. kon* *kāv*, *kōn* *kāv*; *n.* kon *kāv*, *n.* kon *kāv*). *adj.* *n.* *v.* -*caved*, -*caving*. —*adj.* 1. curved like a segment of the interior of a circle or hollow surface; hollow and curved. Cf. *convex* (def. 1). —*Geom.* (of a polygon) having at least one interior angle greater than 180°. 3. *Obs.* hollow. —*n.* 4. a concave surface, part, line, etc. 5. *Arch.* a concave piece, as one against which a masonry rotates. —*v.t.* 6. to make concave. [*L. concavus* (us) (ptp. of *concavāre*)]. —*con-cave/-ly*, *adv.* —*con-cave/-ness*, *n.*
con-cav-i-ty (kōn kav *itē*), *n.* pl. *-ties*. 1. the state or quality of being concave. 2. a concave surface or opening; a hollow; cavity. [*late ME concavitate* + *L. concaviti-* (s. of *concavitas*). See *CON*, *CAVE*'] —*LL concaviti-*
con-cavo-con-cave (kōn kāv *vō* kōn *kāv*), *adj.* concave on both sides. [*L. concavus* (us) + *-o* + *CONCAVUM*]
con-cavo-con-convex (kōn kāv *vō* kōn *veks*'), *adj.* 1. concave on one side and convex on the other. 2. *Optics*, pertaining to or noting a lens in which the concave face has a greater degree of curvature than the convex face. [*L. concavus* (us) + *-o* + *CONVEXUM*]
con-ceal (kōn *sē*'), *v.t.* 1. to hide; withdraw or remove from observation; cover or keep from sight: *He concealed a gun under his coat*. 2. to keep secret; to prevent or avoid disclosing or divulging: *He concealed the true source of the gold*. [*late ME concele, concele* < *AF concele* (r) < *L. cōcellare*, equiv. to *con-* *con-* + *cēllare* to hide; see *OCCELL*]. —*con-ceal/-ed*, *adv.* —*con-ceal/-ed-ly*, *adv.* —*con-ceal/-er*, *n.* 1. See *hide*!
con-ceal-ment (kōn *sē* *mānt*), *n.* 1. the act of concealing. 2. the state of being concealed. 3. a means or mode of hiding. [*ME concelement* < *AF. See CONCEAL*, *MENT*]
con-cede (kōn *sē*'), *v.* -*ceded*, -*ceding*. —*v.t.* 1. to acknowledge as true, just, or proper; admit: *He finally conceded that she was right*. *The Mets finally conceded defeat*. 2. to acknowledge (an opponent's victory, score, etc.) before it is officially established: *to concede an election before most of the votes are counted*. 3. to consent as a right or privilege; yield: *to concede a longer concession to old employees*. —*v.i.* 4. to make concession; yield; admit: *She was so persistent that I conceded last*. [*L. concedere* (re), equiv. to *con-* *con-* + *cēdere* to withdraw, yield, *cedere*]. —*con-ced/-ed-ly*, *adv.* —*con-ced/-er*, *n.* —*con-ced/-o* *li-ble*, *adj.*
con- 1. yield, grant. —*Ant.* 1. deny. 3. refuse.
con-cēit (kōn *sēt*'), *n.* 1. an exaggerated estimate of one's own ability, importance, wit, etc. 2. something that is conceived in the mind; a thought; idea: *He jotted down the conceits of his idle hours*. 3. imagination; fancy; a fancy; whim; fanciful notion. 5. an elaborate, fanciful metaphor, esp. of a strained or far-fetched nature. 6. the use of such metaphors as a literary characteristic, esp. in poetry. 7. a fancy, purely decorative device. 8. *Archaic*, a favorable opinion; esteem. 9. personal opinion or estimation. 9. *Obs.* the faculty of conceiving.

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